

WHAT IS CLAIMED IS:

1. A method for automatically interpreting a non-interactive electronic message, comprising the steps of:

- (a) receiving the electronic message from a source;
- (b) interpreting the electronic message using a rule base and case base knowledge engine; and
- (c) classifying the electronic message as at least one of (i) being able to be responded to automatically; and (ii) requiring assistance from a human operator.

2. The method of claim 1, further comprising the step of:

- (d) retrieving one or more predetermined responses from a repository for automatic delivery to the source when the classification step indicates that the electronic message can be responded to automatically.

3. The method of claim 1, further comprising the steps of:

- (d) retrieving one or more predetermined responses from a repository, the predetermined responses being proposed for delivery to the source;
- (e) forwarding the electronic message and the predetermined response to the human operator when the classification step indicates that a response to the electronic message requires assistance from a human operator; and
- (f) delivering the predetermined response to the source when the human operator deems the response appropriate.

4. The method of claim 3, further comprising the step of:

- (c1) further categorizing the electronic message into at least one of a plurality of sub-categories based on subject matter content of the electronic message.

5. The method of claim 4, wherein the sub-categories include product service subject matter and product sales subject matter.

6. The method of claim 4, further comprising the step of:

- (c2) prioritizing the sub-categorized electronic message into at least one of a plurality of priorities based on the subject matter content of the electronic message

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1 19. A method for automatically interpreting a non-interactive
2 electronic message, comprising the steps of:

- 3 (a) receiving the electronic message from a source;
4 (b) interpreting the electronic message using a rule base and case base
5 knowledge engine; and
6 (c) retrieving one or more predetermined responses corresponding to
7 the interpretation of the electronic message from a repository for automatic delivery to the
8 source.

1 ²⁷₂₀. The method of claim ²⁶₁₉, wherein the source of the electronic
2 message is not predetermined.

1 ²⁸₂₁. The method of claim ²⁶₁₉, further comprising the steps of:
2 (b1) classifying the electronic message as at least one of (i) being able
3 to be responded to automatically; and (ii) requiring assistance from a human operator; and
4 (c) retrieving one or more predetermined responses corresponding to
5 the interpretation of the electronic message from a repository for automatic delivery to the
6 source when the classification step indicates that the electronic message can be responded
7 to automatically.

1 ²⁹₂₂. The method of claim ²⁸₂₁, wherein the step of interpreting the
2 electronic message further includes the steps of:
3 (b1) producing a case model of the electronic message including a set of
4 predetermined attributes for identifying specific features of the electronic message;
5 (b2) detecting at least one of text, combinations of text, and patterns of
6 text of the electronic message using character matching;
7 (b3) flagging the attributes of the case model which are detected in the
8 electronic message; and
9 (b4) classifying the electronic-message as at least one of (i) being able
10 to be responded to automatically; and (ii) requiring assistance from a human operator, the
11 classification being performed in accordance with the flagged attributes.

1 ³⁰₂₃. The method of claim ²⁸₂₁, wherein the step of interpreting the
2 electronic message further includes the steps of:

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(b1) producing a case model of the electronic message including (i) a set of attributes for identifying specific features of the electronic message; and (ii) message text;

(b2) detecting at least one of text, combinations of text, and patterns of text of the electronic message using character matching;

(b3) flagging the attributes of the case model which are detected in the electronic message;

(b4) comparing the flagged attributes of the case model with stored attributes of stored case models of the case base;

(b5) comparing the text of the case model with stored text of the stored case models of the case base; and

(b6) assigning a score to each stored case model which is compared with the case model, the score increasing when at least one of the attributes and the text match the stored case model and the score not increasing when at least one of the attributes and the text do not match the stored case model.

³¹~~24~~. The method of claim ³⁰~~23~~, wherein:
when at least one of the attributes and the text match the stored case model, the score is increased by a predetermined match weight; and

when at least one of the attributes and the text does not match the stored case model, the score is decreased by a predetermined mismatch weight.

³²~~25~~. The method of claim ³¹~~24~~, wherein the match weight has an absolute value greater than zero and the mismatch weight is zero.

³³~~26~~. The method of claim ³¹~~24~~, wherein each score is normalized by dividing the score by a maximum possible score for the stored case model, where the maximum possible score is determined when all of the attributes and text of the case model and the stored case model match.

³⁴~~27~~. The method of claim ³⁰~~23~~, further comprising the step of:
(b7) classifying the electronic message as at least one of (i) being able to be responded to automatically; and (ii) requiring assistance from a human operator, the classification of the electronic message being performed in accordance with the classification of the stored case model having a highest score.

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28. The method of claim ³⁴27, further comprising the step of:
2 (c) retrieving one or more predetermined responses corresponding to
3 the interpretation of the electronic message from a repository for automatic delivery to the
4 source when the classification step indicates that the electronic message can be responded
5 to automatically.

1 ³⁶
29. The method of claim ³⁵28, wherein the predetermined response is
2 altered in accordance with the interpretation of the electronic message before delivery to
3 the source.

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30. The method of claim ³⁰29, wherein the attributes include at least one
2 of a source's address, a do not call request, a request for service, a reference to a foreign
3 country, a long message, a reference to a specific product, a reference to multiple
4 questions, and a reference to a specific employee.

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31. A system for automatically interpreting a non-interactive electronic
2 message received from a source, the system comprising:
3 a server for transmitting and receiving electronic messages over a
4 communications channel;
5 an inbox storage device for storing incoming electronic messages;
6 a knowledge engine including a rule base and a case base, the case base
7 having a plurality of stored cases representing past received electronic messages;
8 a pre-processor for receiving the electronic message and interpreting the
9 electronic message using the rule base;
10 a searching device for searching the electronic message and the case base
11 to retrieve a stored case from the case base which most closely matches the electronic
12 message;
13 a classifier for classifying the electronic message into at least one of (i)
14 being able to be responded to automatically; and (ii) requiring assistance from a human
15 operator.

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32. The system of claim ⁴¹31, further comprising:
2 a repository of predetermined responses, at least one of the responses
3 being selected from the repository by the knowledge base for automatic delivery to the

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1 ~~44~~⁴¹33. The system of claim ~~31~~⁴¹, further comprising:
2 a repository of predetermined responses, one or more of the predetermined
3 responses being selected by the knowledge base for proposed delivery to the source; and
4 an electronic router for forwarding the electronic message to the human
5 operator when the classifier indicates that a response to the electronic message requires
6 assistance from a human operator, the router delivering the predetermined response to the
7 source when the human operator deems the response appropriate.

⁴⁶~~38~~ The system of claim ⁴⁵~~34~~, wherein the sub-categories include product
service subject matter and product sales subject matter.

^{B47}_{37.} The system of claim ^{A7}₃₆, wherein the plurality of priorities of a product service sub-category include at least one of (i) fraud and lost products; (ii) sensitive information; (iii) general information; and (iv) user comments.

⁵⁰~~47~~ 39. The system of claim ⁴¹~~36~~, wherein the plurality of priorities of a product sales sub-category include promotional content, request for services, and general questions and lengthy messages.

1 ⁵¹~~50~~ ³⁸~~39~~
 40. The system of claim 39, wherein the listed priorities are in order
 2 from highest to lowest priority.

41. A method for automatically interpreting a non-interactive electronic message, comprising the steps of:

- (a) receiving the electronic message from a source;
- (b) interpreting the electronic message using a rule base and case base knowledge engine;
- (c) retrieving one or more predetermined responses from a repository, the predetermined responses being proposed for delivery to the source;
- (d) forwarding the electronic message and the predetermined response to a human operator; and
- (e) delivering the predetermined response to the source when the human operator deems the response appropriate.

⁵⁵~~42~~. The method of claim ⁵⁴~~41~~, further comprising the step of:

- (b1) categorizing the electronic message into at least one of a plurality of sub-categories based on subject matter content of the electronic message.

⁵⁶~~43~~. The method of claim ⁵⁵~~42~~, wherein the sub-categories include product service subject matter and product sales subject matter.

⁵⁷~~44~~. The method of claim ⁵⁶~~43~~, further comprising the step of:

- (b2) prioritizing the sub-categorized electronic message into at least one of a plurality of priorities based on the subject matter content of the electronic message wherein a higher priority indicates that the human operator should process the associated electronic message before processing lower prioritized electronic messages.

⁵⁸~~45~~. The method of claim ⁵⁷~~44~~, wherein the plurality of priorities of a product service sub-category include at least one of (i) fraud and lost products; (ii) sensitive information; (iii) general information; and (iv) user comments.

⁵⁹~~46~~. The method of claim ⁵⁸~~45~~, wherein the listed priorities are in order from highest to lowest priority.

⁶⁰~~47~~. The method of claim ⁵⁹~~46~~, wherein the plurality of priorities of a product sales sub-category include promotional content, request for services, and general questions and lengthy messages.

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1 ⁶¹~~48~~. The method of claim ⁶⁰~~47~~, wherein the listed priorities are in order
2 from highest to lowest priority.

1 ⁶²~~49~~. The method of claim ⁵⁴~~41~~, wherein the step of interpreting the
2 electronic message further includes the steps of:

3 (b1) producing a case model of the electronic message including a set of
4 predetermined attributes for identifying specific features of the electronic message;

5 (b2) detecting at least one of text, combinations of text, and patterns of text
6 of the electronic message using character matching; and

7 (b3) flagging the attributes of the case model which are detected in the
8 electronic message.

1 ⁶³~~50~~. The method of claim ⁵⁴~~41~~, wherein the step of interpreting the
2 electronic message further includes the steps of:

3 (b1) producing a case model of the electronic message including (i) a
4 set of attributes for identifying specific features of the electronic message; and (ii)
5 message text;

6 (b2) detecting at least one of text, combinations of text, and patterns of
7 text of the electronic message using character matching;

8 (b3) flagging the attributes of the case model which are detected in the
9 electronic message;

10 (b4) comparing the flagged attributes of the case model with stored
11 attributes of stored case models

12 of the case base;

13 (b5) comparing the text of the case model with stored text of the stored
14 case models of the case base; and

15 (b6) assigning a score to each stored case model which is compared
16 with the case model, the score increasing when at least one of the attributes and the text
17 match the stored case model and the score not increasing when at least one of the
18 attributes and the text do not match the stored case model.

1 ⁶⁴~~51~~. The method of claim ⁶³~~50~~, wherein:
2 when at least one of the attributes and the text match the stored case
3 model, the score is increased by a predetermined match weight; and

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1 ~~61~~. The method of claim ~~19~~, wherein the predetermined response is
 2 altered in accordance the interpretation of the electronic message before delivery to the
 3 source.

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1 ~~62~~. The method of claim ~~19~~, wherein the electronic message includes
 2 fixed data.

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1 ~~63~~. The method of claim ~~19~~, wherein the electronic message includes
 2 variable data.

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1 ~~64~~. The system of claim ~~32~~, wherein the predetermined response is
 2 altered in accordance the interpretation of the electronic message before delivery to the
 3 source.

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1 ~~65~~. The method of claim ~~31~~, wherein the electronic message includes
 2 fixed data.

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1 ~~66~~. The method of claim ~~31~~, wherein the electronic message includes
 2 variable data.

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